ADEQ Arizona Department of Environmental Quality
Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

MEETING MINUTES

OU #09-014

Phoenix-Goodyear Airport Area/Western Avenue Plume
Community Advisory Group (CAG) Meeting

Thursday, August 7, 2008 at 6:30 p.m.
Goodyear City Hall, Room 117
190 N. Litchfield Road
Goodyear, Arizona

DRAFT MINUTES

CAG Members in Attendance:
David Foltz
Susan Kagan
Diane Krone
Frank Scott
Bob Smith

ADEQ Staff in Attendance:
Chris Gamache, PGA-South Project Manager
Cathy O'Connell, PGA-North Project Manager
Tom Di Domizio, Western Avenue Project Manager
Linda Mariner, Community Involvement Coordinator
Andre Chiaradia, ADEQ Hydrologist

EPA Staff in Attendance:
Mary Aycock, PGA-North Project Manager

Others in Attendance:
Harry Brenton, ARCADIS
Ron Clark, Goodyear Tire & Rubber Co.
David Iwanski, City of Goodyear
Nancy Nesky, ITSI
Tom Suriano, Clear Creek Associates
Tiffany Downey, GeoTrans
Leanne Austrins, CH2M Hill

---

1. Call to Order / Introductions – Diane Krone

Ms. Susan Kagan, CAG Co-chair, facilitated the meeting. CAG members and all meeting attendees introduced themselves.

2. Update on timeframe for demolition of buildings at PGA-North – Harry Brenton, ARCADIS

Mr. Brenton introduced himself and initiated his presentation to the CAG by outlining plans for the building demolition project at PGA-North. Mr. Brenton highlighted that expected building demolition was to begin in early 2009.

See slide presentation below

Ms. Krone addressed to Mr. Brenton public concerns that she has heard over the deplorable appearance of the old Unidynamics property. In response Ms. Aycock replied that Crane Co. recommended that a letter of request be sent by EPA to Crane Co.'s Real Estate Unit for exterior maintenance, e.g. weed removal etc., in order to begin the requested exterior improvements. She stated that Crane Co. had assured EPA that this written communication would evoke the desired cleanup action. Both Ms. O'Connell and Ms. Aycock agreed to work together on drafting a letter to be sent to Crane Co.

Ms. Kagan asked about whether any City codes would apply in dealing with the unsightly look of the property. Mr. Iwanski responded that the City has really been focused on encouraging the groundwater cleanup, and it was assumed that the demolition would take care of the problem. He confirmed that the City would be supportive of the letter to Crane Co. in requesting that the property look be improved.

3. Update of PGA-North activities – Harry Brenton, ARCADIS
Mr. Brenton reviewed with the CAG ongoing and future plans for the PGA-North Site that included the following topics: treatment systems; treatment system enhancements; ongoing groundwater investigation; conduit wells; additional on-site sampling; and on-site treatment of contaminants.

See slide presentation below

Mr. Foltz inquired as to what carrier solution was used to inject the nano-scale Zero Valent Iron (nZVI) into the well during the injection process to treat the TCE. In response Mr. Brenton stated that groundwater was used. Mr. Foltz also questioned Mr. Brenton about the depth of the injection wells. Mr. Brenton replied that well depths are 120 feet.

Ms. Kagan inquired of Mr. Brenton if he was surprised over the amount of contamination that had been removed to date from PGA-North. In response Mr. Brenton stated that a removal of 50,000 pounds of TCE was not that surprising, but rather encouraging. In addition he added that an established baseline to determine a quantity of what had been dumped prior to remediation activities had not been available.

Ms. Krone inquired if this injection process of the nZVI would continue. In response Ms. Aycock stated that this was a pilot study and results would be reported with regards to future applications of this remediation method. In addition Ms. Aycock supported Mr. Brenton's statement that the results to date from the injection treatments appear promising as a possible technology for removal of TCE.

Ms. Krone also requested an update from Mr. Brenton regarding the size of the plume at PGA-North. Mr. Brenton confirmed that the plume had neither expanded nor decreased. Additionally he reminded the CAG that the two new extraction wells that were recently installed were succeeding in pulling the trichloroethene (TCE) mass towards these wells. Ms. Krone then asked if this Superfund site had contaminated the Litchfield Lake. In response Mr. Brenton advised that samples taken on a monthly basis from the Litchfield Lake Well indicated that there was no TCE contamination in that well, but that very small levels of perchlorate – 1.4 to 1.8 parts per billion (ppb) – were detected. In addition Mr. Brenton explained that an extraction well was installed to pull the plume back and prevent it from going any further north towards the Litchfield Lake Well.

4. Update of PGA- South activities – Ron Clark, Goodyear Tire & Rubber Company
Mr. Clark greeted the CAG and proceeded to review current, ongoing and projected activities for PGA-South.

See slide presentation below

No questions were asked.

5. City of Goodyear (City) Report- David Iwanski, COG Water Department
Mr. Iwanski reported that the City is moving forward in their Brownfields project made possible by the Crane Co. settlement with EPA. The needed Brownfields'documents have all been submitted and made ready to open escrow for the million dollar deposit. These documents are currently in the City Attorney's Office for amendment review.

In addition an access indemnification and water use agreement for Well EA06 was in place at the community park, which will provide the ability to use that water for nonpotable beneficial reuse. Mr. Iwanski also advised the CAG that the Public Works Department for Goodyear residents was in the process of also executing an access indemnification and water use agreement for EA05. This agreement would be utilized towards the construction of the Park and Ride Facility and for other future developmental uses.

Ms. Kagan requested that Mr. Iwanski prepare a document for the next CAG meeting delineating which sites might be selected as Brownfields and the type of work that will be done after selection takes place. In response Mr. Iwanski stated that there were steps that must be completed prior to identifying specific properties for each phase. Mr. Iwanski noted that first an identification of all potential sites still needs to be completed by their consultants on the project. In addition criterion also needs to be developed for the Citizens' Advisory Committee to prioritize three or four properties that will be selected for the next phases in the redevelopment project.

6. Call to the Public
Mr. Suriano commented that the small levels of perchlorate that were detected in the Litchfield Lake lead to the City of Litchfield Park's posting of the cautionary No Fishing signs. In addition, at the time of testing there was no city established standard available for perchlorate. After the city's consultation with the Arizona Department of Health Services, who reported that the levels obtained through their sampling posed no risk, the signs were removed. Ms. Kagan asked Mr. Suriano if there was any way to publicize that information. Mr. Suriano replied that he would take her request back to the City of Litchfield Park.

The CAG took a 10-minute break.

7. Acceptance and/or changes to minutes of May 1, 2008
Ms. Kagan asked if anyone had any changes to the minutes. Ms. Krone made a motion to accept the minutes and Mr. Scott seconded. The minutes were accepted.

8. Future meeting and agenda items discussion
The next meeting was scheduled for Thursday, November 6, 2008 with the exact meeting location to be determined at a later date. Mr. Iwanski had advised the CAG that that due to scheduling conflicts the usual meeting venue at the Goodyear City Hall would not be available. Mr. Iwanski committed to search for a conference room in a City facility north of I-10 to reach the community up there. If no other location can be found, Mr. Iwanski assured the CAG that he could schedule the City's Water Resources Building for the meeting. Suggested agenda topics for the next CAG meeting included: CAG membership discussion; update of PGA-North activities, update of PGA-South activities, update on the City's Brownfields project; and a Western Avenue WQARF Site update.

9. Adjournment

Ms. Scott motioned to adjourn the meeting and Mr. Foltz seconded the motion. The CAG voted to adjourn until November's meeting.

Phoenix-Goodyear Airport-North (PGA-North) Superfund Site

Update of Current and On-going Site Investigation, Remediation Activities, & Building Demolition

PGA-North Community Advisory Group Meeting

August 7, 2008

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

Building Demolition

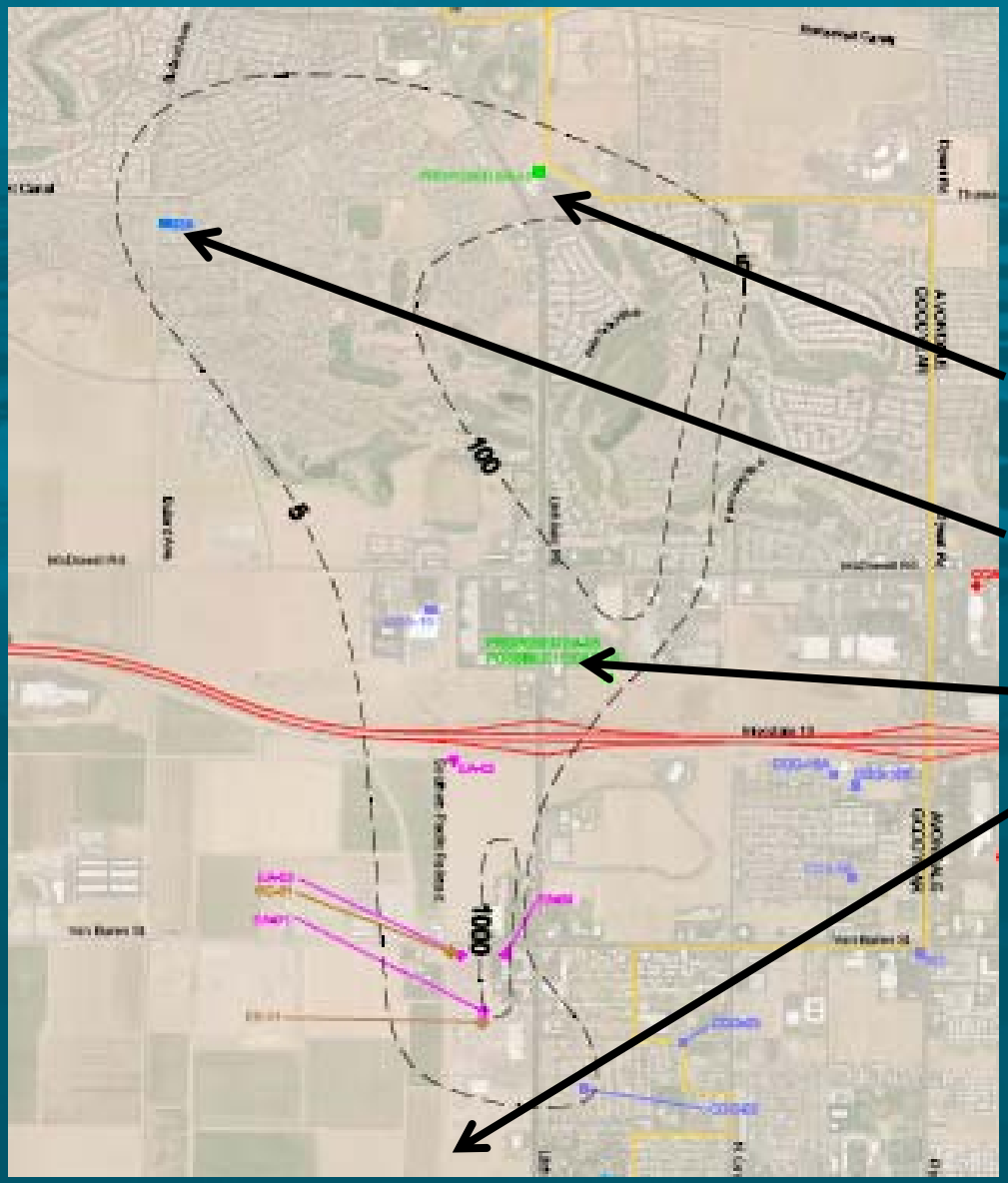
Building Demolition Project

- Crane Co. is currently evaluating proposals
- Contractor selection/Contract Negotiations: Fall 2008
- Work Plan to US EPA in Dec 2008
- Start building Demolition in early 2009
- Project may be phased over several years

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

Groundwater Treatment Systems



- EA-06 Treatment System
- 33A Treatment System
- EA-05 Treatment System
- Main Treatment System (MTS)

ARCADIS

Main Treatment System

- Six Extraction Wells
- Six Injection Wells
- Up to 455 GPM
- Operating Since 1994
- Treatment for VOCs and ClO_4^-

Treatment System Performance

- Main Treatment System (Through June 2008)
  - Since Jan 2008
    - Approx. 139 Million Gallons of Groundwater Treated
    - 280 Pounds TCE Removed
    - 36.5 Pounds Perchlorate Removed
  - Totals Since Start up
    - Approx. 1.5 Billion Gallons of Groundwater Treated
    - 50,706 Pounds TCE Removed
    - 86.9 Pounds Total Perchlorate Removed (Since Jan 2003)

Well 33A Treatment System

- One Extraction Well
- Up to 750 GPM
- Treatment for VOCs
- Operating Since 1997
- Discharge to RID Canal

Treatment System Performance

- Well 33A Treatment System through June 2008
  - Since Jan 2008
    - Approximately 203 Million Gallons of Groundwater Treated
    - 102 Pounds TCE Removed
  - Totals Since Start up
    - Approximately 4.3 Billion Gallons of Groundwater Treated
    - 7,589 Pounds Total TCE Removed

New Treatment Systems

- Crane Co. Installed two Extraction Wells/Treatment Systems in 2007/2008 (EA-05 and EA-06)
  - Control Expansion of TCE Plume
  - Treatment of VOCs Groundwater
- EA-06 GTS
  - Located at Goodyear Community Park
  - Completed December 17, 2007
- EA-05 GTS
  - Located SE of at Litchfield Rd and McDowell Rd
  - Completed March 31, 2008

Well EA-06 Treatment System

- One Extraction Well
- Up to 600 GPM
- Operating Since Jan 2008
- Treatment of VOCs
- Treated discharge to RID Canal

EA-06 Extraction System Plan View

ARCADIS

EA-06 Well Compound

ARCADIS

EA-06 Treatment System

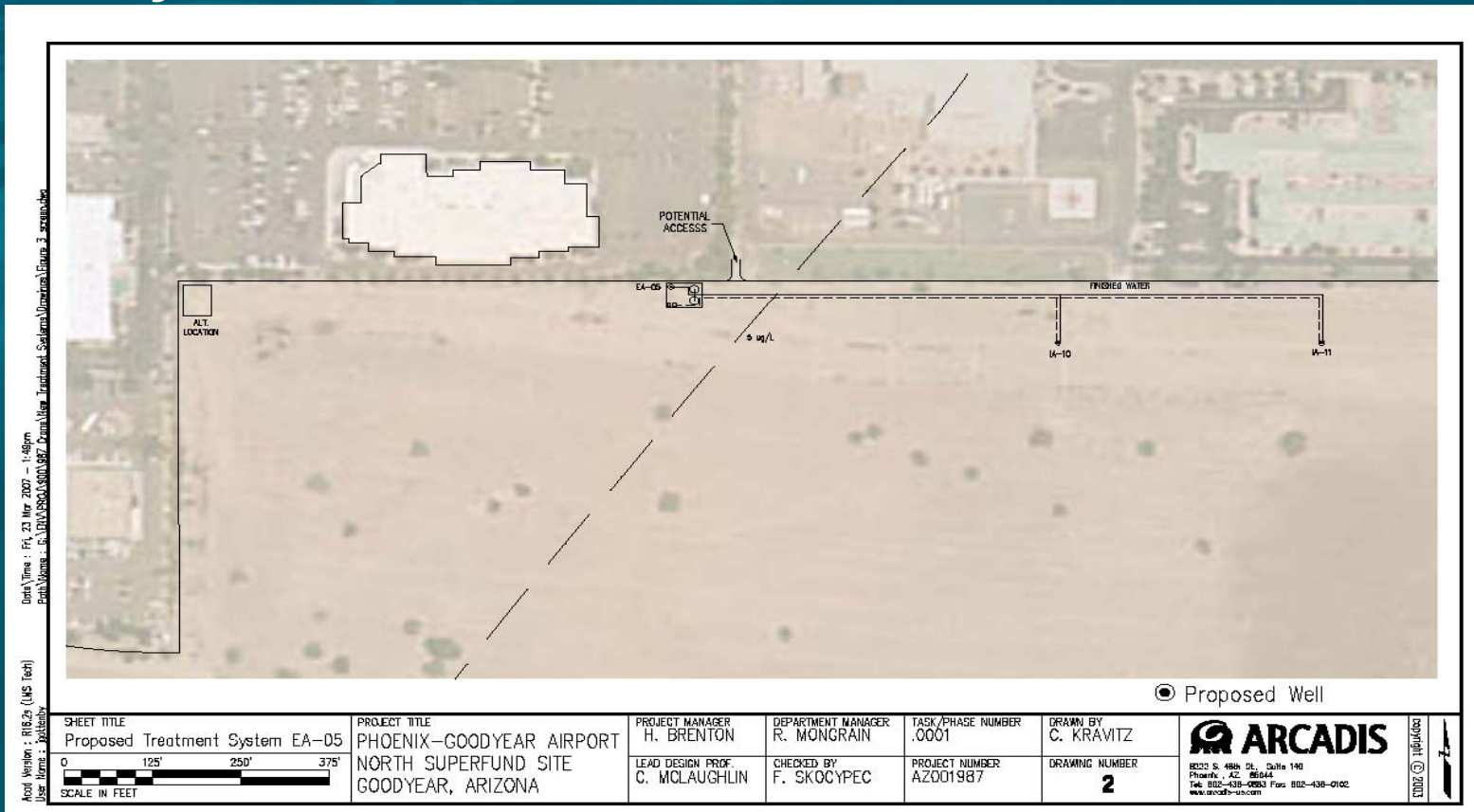
Treatment System Performance

- Well EA-06 Treatment System (through June 2008)
  - Since Start up
    - 109 Million Gallons of Groundwater Treated
    - 57.12 Pounds TCE Removed

EA-05 Groundwater Treatment System

- One Extraction Well
- One Injection Well
- Up to 500 GPM
- Operating Since March 31, 2008
- Treatment for VOCs
- Reinjection of treated water

EA-05 Groundwater Treatment System

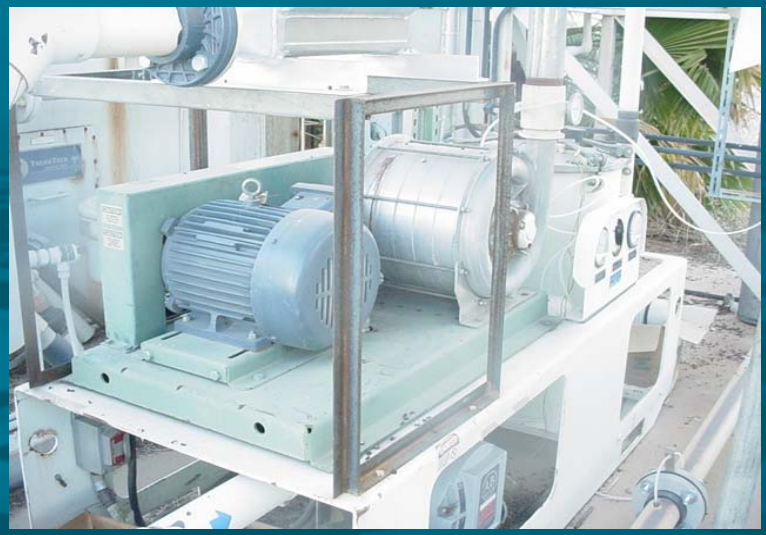


Treatment System Performance

- Well EA-05 Treatment System (through June 2008)
  - Since Start up
    - 75 Million Gallons of Groundwater Treated
    - 4.3 Pounds TCE Removed

SVE System

- On UPI Site
- Treatment of VOCs inSoil
- Protects Groundwater
- Installed in 1996
- Restarted in 2004
- Carbon Filters for Off-Gas
- 9 Vapor Extraction wells
- 15 Vapor Monitor wells



SVE System Operation

- Contaminant Mass Removal
  - Since Jan 2008
    - Total VOCs – 61 pounds
    - TCE – 33 pounds
  - Since April 2004 Restart
    - Total VOCs – 2,370 pounds
    - TCE – 1,457 pounds

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

Recent Treatment System Enhancements

- 2007 - Main Treatment System Enhancements
  - Well EA-01 increased from 60 to 90 gpm (50%)
  - Subunit C Pumping
    - Operating Two Wells EC-01 and MW-20
    - Total of 210 gpm (350% increase from 2006)
  - MTS operating at ~455 gpm, 50% increase from 2006
- 2007 - 33A Treatment System Enhancements
  - Increased pumping from 600 gpm to 750 gpm – an increase of 30%

Planned Treatment System Enhancements

- 2008-2009 - MTS Enhancements
  - Stage 1 – (31% increase in treatment capacity)
    - Increase pumping in Subunit A
    - Increase over all pumping to 595 gpm
    - Work Plan submitted to USEPA on April 1, 2008
    - EPA approval of Work Plan on July 22, 2008
    - Field Work started on August 5, 2008
    - Complete Stage 1 Expansion in Nov 2008

Planned Treatment System Enhancements

- 2008-2009 - MTS Enhancements
  - Stage 2 (42% increase in treatment Capacity)
    - Install new air stripper for Subunit C water
    - Additional Increase in pumping from Subunit A
    - Stage 2 Work Plan: Due to EPA on Sep 15, 2008

Planned Treatment System Enhancements

- 2009 - MTS Enhancements
  - Stage 3 (75% increase in treatment Capacity)
    - Install Subunit A extraction well EA-07
    - Install new injection well to south of UPI
    - Install new booster pump for IX system.
    - Increase overall pumping to 795 gpm

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

On-Going Groundwater Investigation

- Work Completed To Date
  - Fifteen Monitor Wells Year 1 (Feb 2006 –Sep 2007)
    - According to USEPA Approved Work Plan
      - Two MAU Wells – 500+ Feet Deep
      - Five Subunit C Wells – 250+ Feet Deep
      - Eight Subunit A Wells – 150+ Feet Deep
  - Ten Monitor Wells Year 2 (Oct 2007 – Jul 2008)
      - Three Subunit C wells - 250+ Feet Deep
      - seven Subunit A well – 150+ Feet Deep
- Remaining Year 2 Work
    - One Subunit A Well
    - One Subunit C Well
    - Completed by Aug-Sep 2008

On Going Groundwater Investigation

Installation of Subunit A Well

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

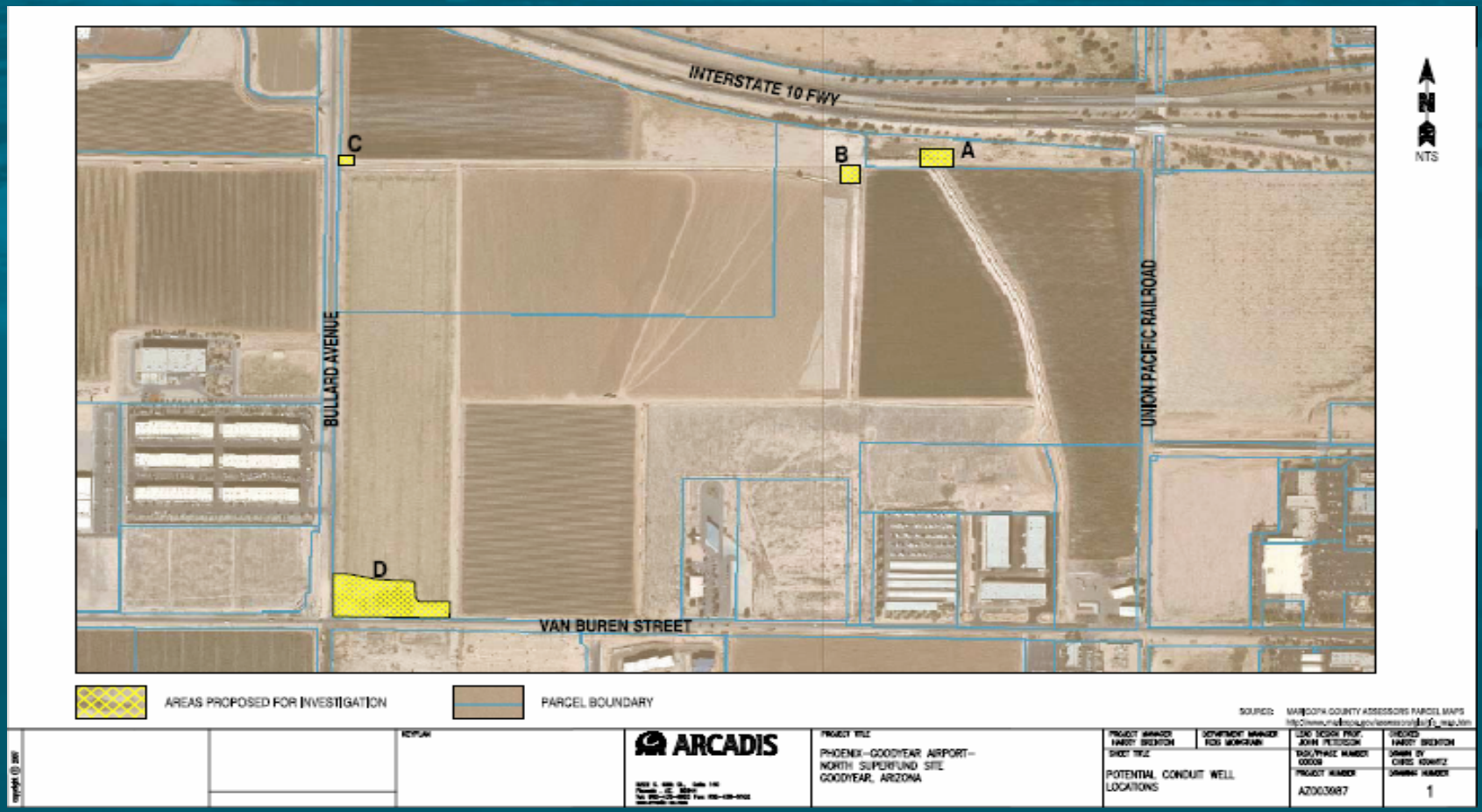
Conduit Wells

- Ongoing program to assess potential conduit wells
- Goal to protect deeper groundwater
  - Hydrophysical Investigations
  - Well Abandonments
  - Exploratory Excavations

Conduit Wells

- Completed Conduit Well Activities
  - Hydrophysical Investigations
    - SunCor wells -27A, -27C, and -3B (2006 and 2007)
    - COG-02 (2005)
    - COG-10 (2005)
  - Well Abandonments
    - COG-02 (2006)
    - COG-10 (2006)
    - COG-04 (2007)
- Recent Conduit Well Activities
  - Exploratory Excavation
    - 4 - Potential conduit well locations- EJM Development Parcel (2008)

Potential Conduit Wells on EJM Development Parcel



Potential Conduit Wells on EJM Development Parcel

- Field work completed on May 20, 2008
- Four Locations were investigated (A, B, C, and D)
  - Locations C and D are outside the Conduit well study Area
    - Location A (Unknown 1 and Unknown 2)
      - 30-inch dia stovepipe casing filled with concrete (Unknown 1)
      - Pile of contrite (Unknown 2)
    - Location B (55-805073)
      - Former irrigation well
    - Locations C (55-805072)
      - Former Well with line shaft Turbine Pump (east of Bullard Ave)
    - Location D (55-805074)
      - Former well on corner of Van Buren and Bullard)

Potential Conduit Wells -EJM Development Parcel

Excavation at Location A (Unknown 1)

Potential Conduit Wells -EJM Development Parcel

Excavation at Location A (Unknown 2)

Conduit Wells -EJM Development Parcel

Location B (55-805073)

Conduit Wells -EJM Development Parcel

Summary of Findings

- Location A (Unknown 1 and Unknown 2)
  - Excavated area to 6.5 ft bgs
  - No evidence of old wells were identified
- Location B (55-805073)
  - Located 19-inch Dia metal plate capping former well
  - Used sounder to gauge well
  - Total depth at 58.1 ft bgs
  - Video of well in June 2008
  - Surface water seen dripping from casing joint at 8 ft bgs
  - Unable to identify material at bottom of hole

Update on Conduit Wells -EJM Development Parcel

Location C (55-805072)

Update on Conduit Wells -EJM Development Parcel

Location D (55-805074)

Conduit Wells -EJM Development Parcel

Summary of Findings

- Location C
  - Base of the well was covered with soil
  - Soil was removed and spacers were placed beneath the turbine pump to allow for access.
  - No evidence of water was noted
  - Total depth was not determined
- Location D
  - Depth to water was measured at 119.11 ft bgs.
  - Total depth was not determined

Conduit Wells

- Upcoming Activities
  - Hydrophysical Investigation at SunCor well 34B
  - Additional investigation at Location C to determine if well was properly abandoned

Agenda

- Building Demolition Project
- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Investigations
- On-Site Treatment of Contaminants

Additional On-Site Sampling

Source Areas, Soils and Facility Structures (SASFS) Investigation - Phase I

- Goal - to determine if other sources contamination is present

- Phase I Work conducted in 2007 and Included:
  - Over 100 soil borings
  - Over 200 soil samples
  - Excavation of below grade structures
  - No other sources of contamination were discovered

- Building Decontamination: Sep 2007 thru Nov 2007

Additional On-Site Sampling

- Phase I Report and Phase II Work plan submitted January 25, 2008
  - Phase II Work to include
  - Additional soil borings and sampling
  - Investigation beneath structures
- Soil Gas Investigation
  - Investigate potential other sources of contamination
  - Final Work Plan to USEPA submitted on July 18, 2008
  - Field work to start in October 2008

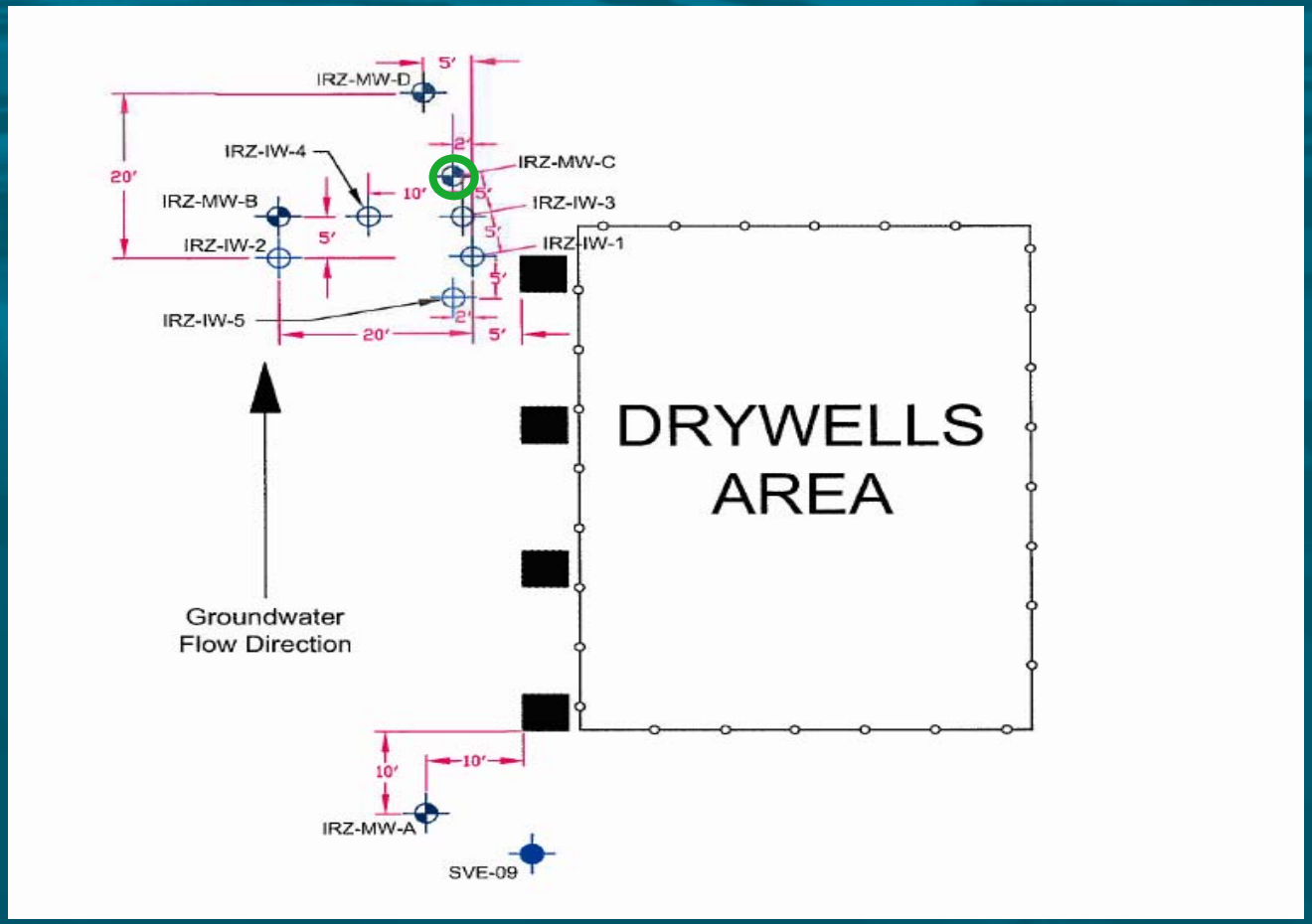
Agenda

- Treatment Systems (GW and Soil)
- Treatment System Enhancements
- Ongoing Groundwater Investigation
- Conduit Wells
- Additional On-Site Sampling
- On-Site Treatment of Contaminants

On-Site Treatment of Contaminants

- Crane Co. Evaluating In-Situ Treatment of TCE in Source Zones
- Use of nano-scale Zero Valent Iron (nZVI)
  - Chemically Reduces TCE to Non-Harmful Compounds
  - Selected for Analysis due to Rapid Treatment
- nZVI injections were conducted the week of June 2, 2008 at Main Drywells Source Area.
  - 50 pounds of nZVI was injected into the Subunit A Aquifer

On-Site Treatment of Contaminants



Phase II Injection Solution Summary

- Approximately 50 pounds of nZVI injected over three days

Date	nZVI Solution Strength (grams/Liter)	Bromide Tracer (milligrams/Liter)	Injection Volume (gallons)	Duration (hours)	Injection Rate (gallons/minute)
6-4-08	2.1	1,900	1,776	8.8	3.4
6-5-08	2.1	2,400 (2,300)	525	7.8	1.1
6-6-08	2.1	2,400 (2,300)	450	11	0.7
Average/Total	2.1	2,175	2,751	27.6	1.7

On-Site Treatment of Contaminants

On-Site Treatment of Contaminants

Summary of Results

- TCE concentrations decrease in all observation wells
- TCE concentrations remain low in some wells

Well	Distance from Injection Well (Feet)	Baseline TCE In Groundwater (µg/L)	Lowest TCE In Groundwater (µg/L)	Current * TCE In Groundwater (µg/L)
IRZ-IW-5	0	2,850	11	60
IRZ-IW-1	5	11,000	1,400	6,600
IRZ-IW-3	10	7,100	310	590
IRZ-IW-4	14	11,000	2,500	8,500

*Seven weeks after the injection event

On-Site Treatment of Contaminants

- Continue to collect post injection samples from wells

- Crane Co. & USEPA will be evaluating other proven technologies on a case by case basis in the future.

The End

Phoenix-Goodyear Airport-South Project Site Status Report

Community Advisory Group

Meeting August 7, 2008

Agenda

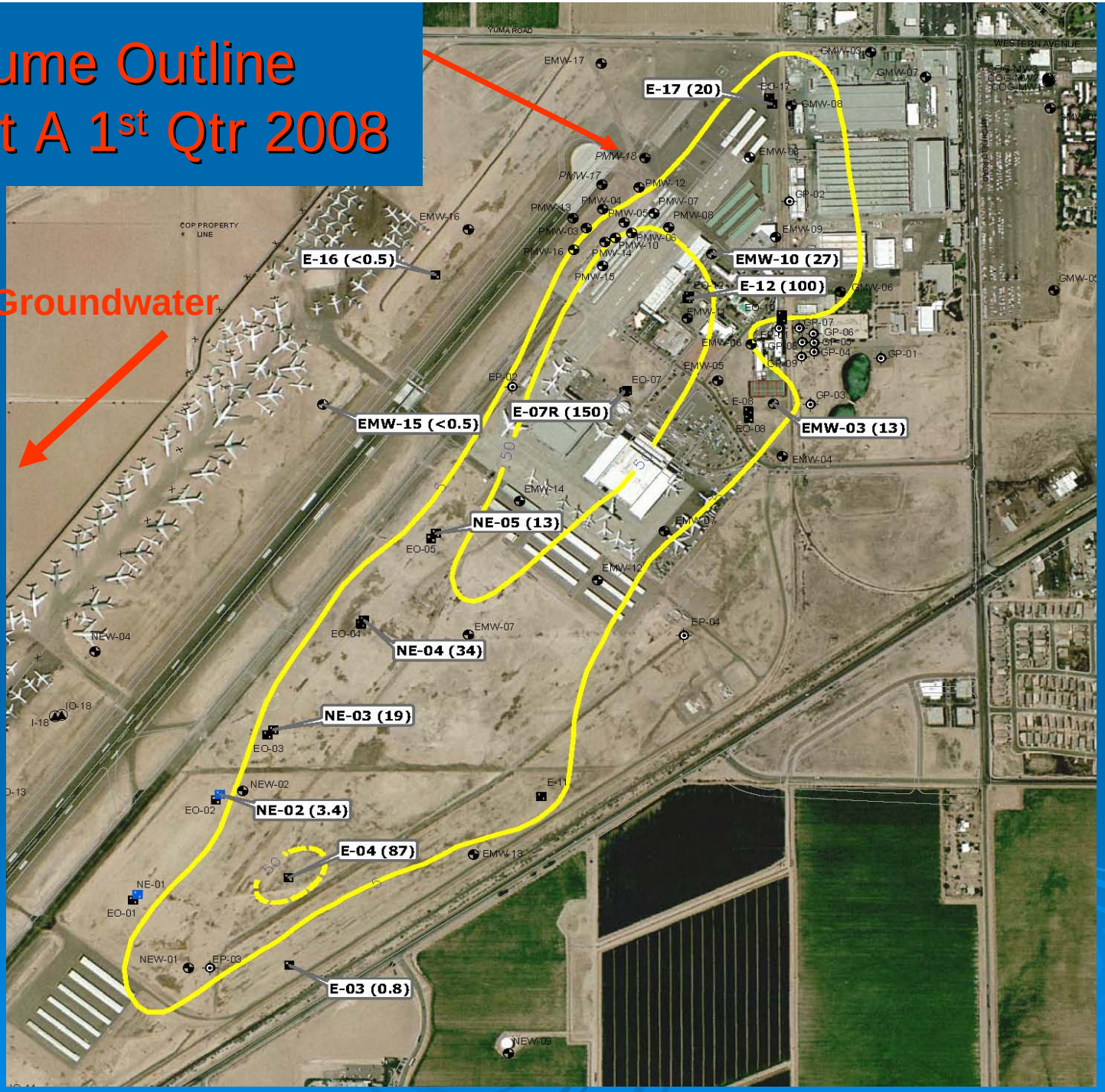
- Review current activities
- Update status of ongoing cleanup
- Upcoming activities

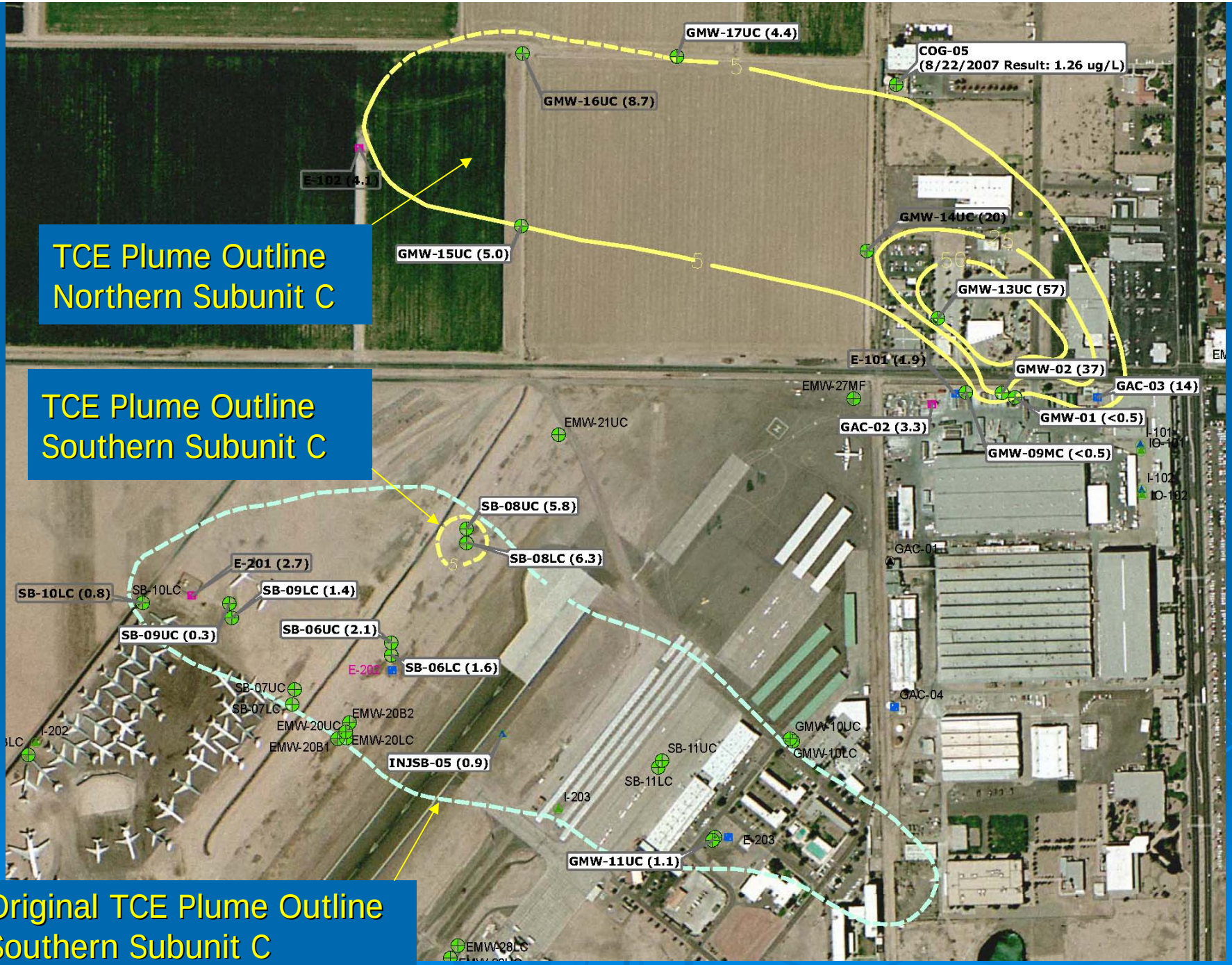
Review of Current Activities

- Ecological Screening Report Approved
- GAC#4 Back on line April 29, 2008
- Chrome bed sampling report submittal August 8, 2008
- Responding to comments on QAPP revisions
- Feasibility Study for treatment alternatives submittal August 8, 2008

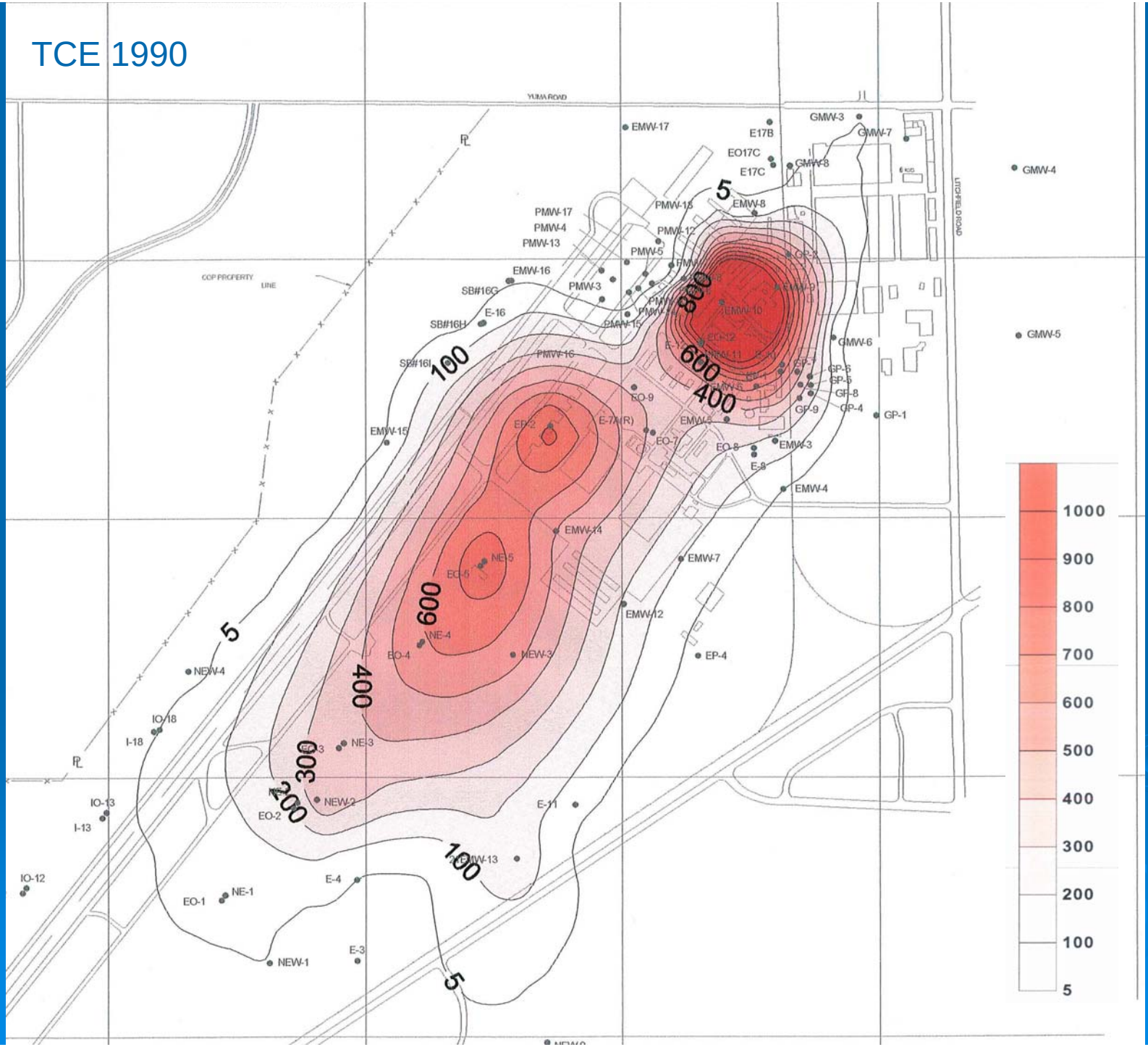
TCE Plume Outline Subunit A 1st Qtr 2008

Regional Groundwater Flow

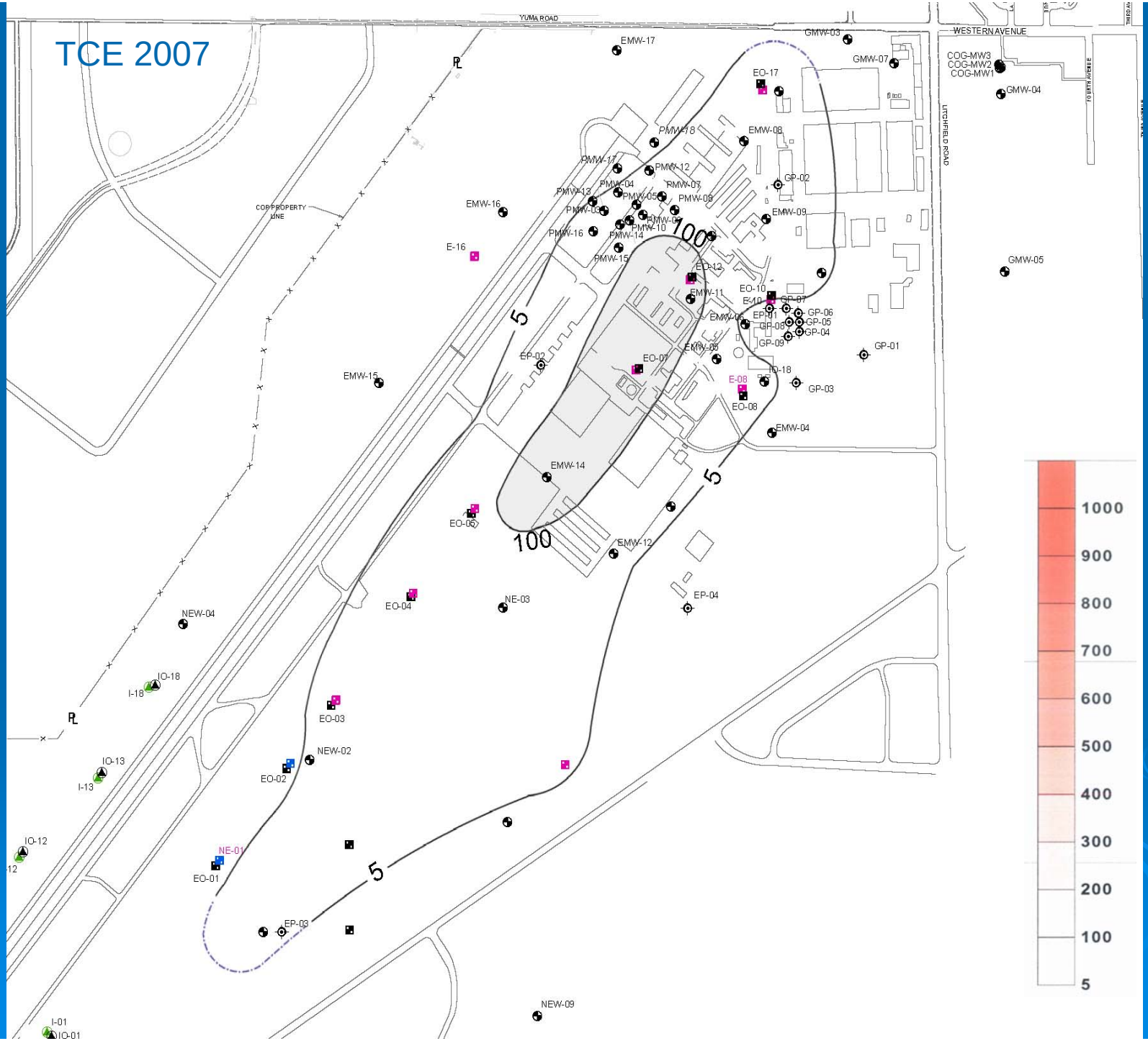



TCE Plume Outline
Northern Subunit C
TCE Plume Outline
Southern Subunit C
Original TCE Plume Outline
Southern Subunit C
GMW-17UC (4.4)
COG-05
(8/22/2007 Result: 1.26 ug/L)
GMW-16UC (8.7)
E-102 (4.1)
GMW-15UC (5.0)
GMW-14UC (20)
GMW-13UC (57)
E-101 (1.9)
GMW-02 (37)
GAC-03 (14)
EMW-27MF
GMW-01 (<0.5)
EMW-21UC
GAC-02 (3.3)
GMW-09MC (<0.5)
SB-08UC (5.8)
SB-08LC (6.3)
GAC-01
E-201 (2.7)
SB-10LC (0.8)
SB-10LC
SB-09LC (1.4)
SB-09UC (0.3)
SB-06UC (2.1)
E-202
SB-06LC (1.6)
SB-07UC
SB-07LC
EMW-20B2
EMW-20UC
EMW-20B1
EMW-20LC
I-202
INJSB-05 (0.9)
GAC-04
GMW-10UC
GMW-10LC
SB-11UC
SB-11LC
I-203
E-203
GMW-11UC (1.1)
EMW-28LC

TCE 1990

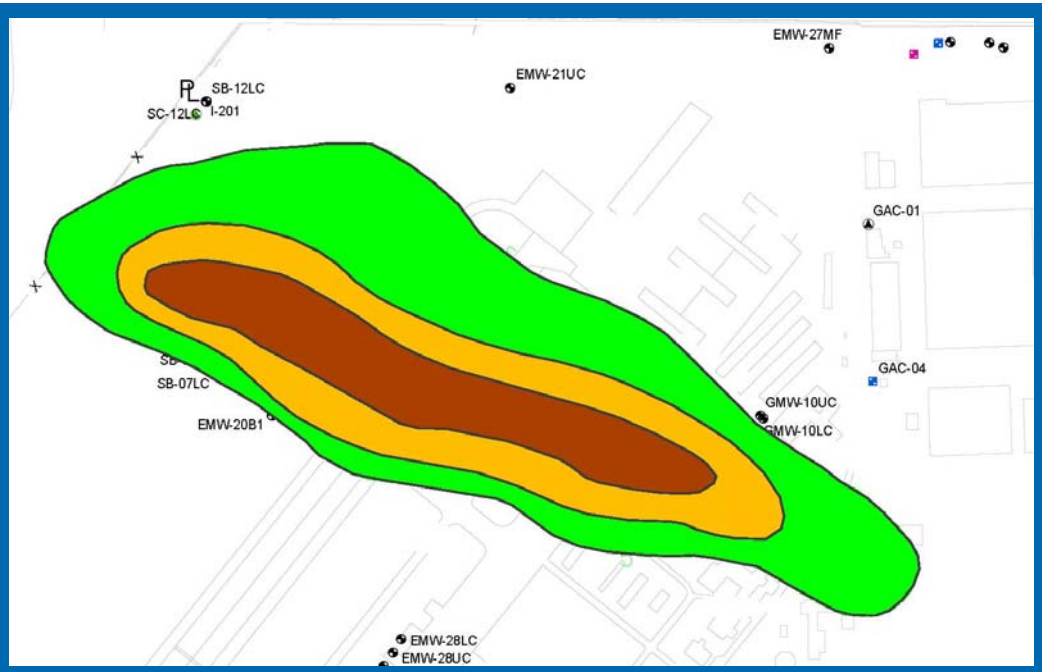

YUMA ROAD
COP PROPERTY LINE
EMW-17
E17B
GMW-3
GMW-7
EO17C
E17C
GMW-8
GMW-4
EMW-8
PMW-17
PMW-4
PMW-13
PMW-18
PMW-12
PMW-5
PMW-3
EMW-16
SB#16G
E-16
SB#16H
SB#16I
PMW-16
PMW-15
EMW-10
GMW-6
GMW-5
GP-6
GP-5
GP-8
GP-9
GP-4
GP-1
EO-9
E-7A(R)
EMW-5
EMW-15
EP-2
EO-7
EO-8
EMW-3
E-8
EMW-4
EMW-14
NE-5
EO-5
EMW-7
EMW-12
NE-4
EO-4
NEW-3
EP-4
NEW-4
IO-18
I-18
NE-3
IO-13
I-13
NEW-2
EO-2
E-11
NEW-13
IO-12
E-4
EO-1
NE-1
NEW-1
E-3
5
100
200
300
400
600
900
800
700
500
1000

TCE 2007

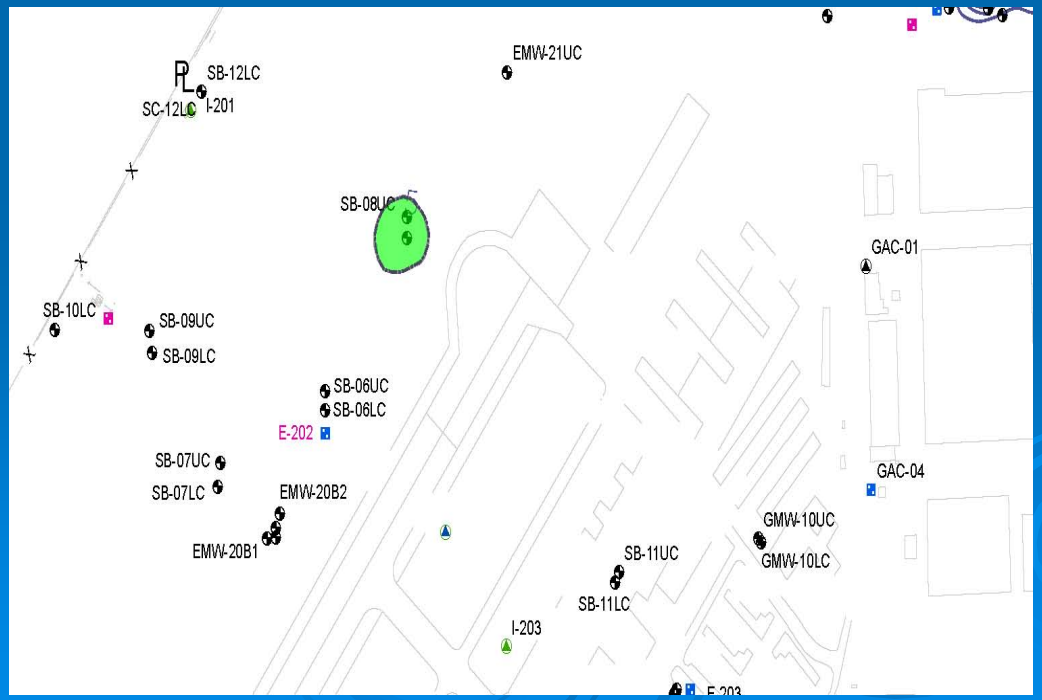

YUMA ROAD
WESTERN AVENUE
LITCHFIELD ROAD
COG-MW3
COG-MW2
COG-MW1
GMW-03
GMW-07
GMW-04
GMW-05
EMW-17
EO-17
EMW-08
PMW-18
PMW-17
PMW-12
PMW-04
PMW-13
PMW-07
PMW-05
PMW-09
PMW-06
PMW-08
PMW-10
PMW-16
PMW-14
PMW-15
GP-02
EMW-09
EMW-16
E-16
EO-12
EMW-11
EO-10
E-10
GP-07
GP-06
GP-05
GP-04
GP-08
GP-09
EMW-10
EMW-06
GP-01
EP-02
EO-07
EO-18
E-08
EO-08
GP-03
EMW-15
EMW-04
EMW-14
EO-06
EMW-12
EP-04
NE-03
EO-04
NEW-04
IO-18
I-18
EO-03
NEW-02
IO-13
I-13
EO-02
IO-12
NE-01
EO-01
EP-03
NEW-09
I-01
IO-01
COP PROPERTY LINE
100
5
1000
900
800
700
600
500
400
300
200
100
5

SOUTHERN PLUME

1994 TCE



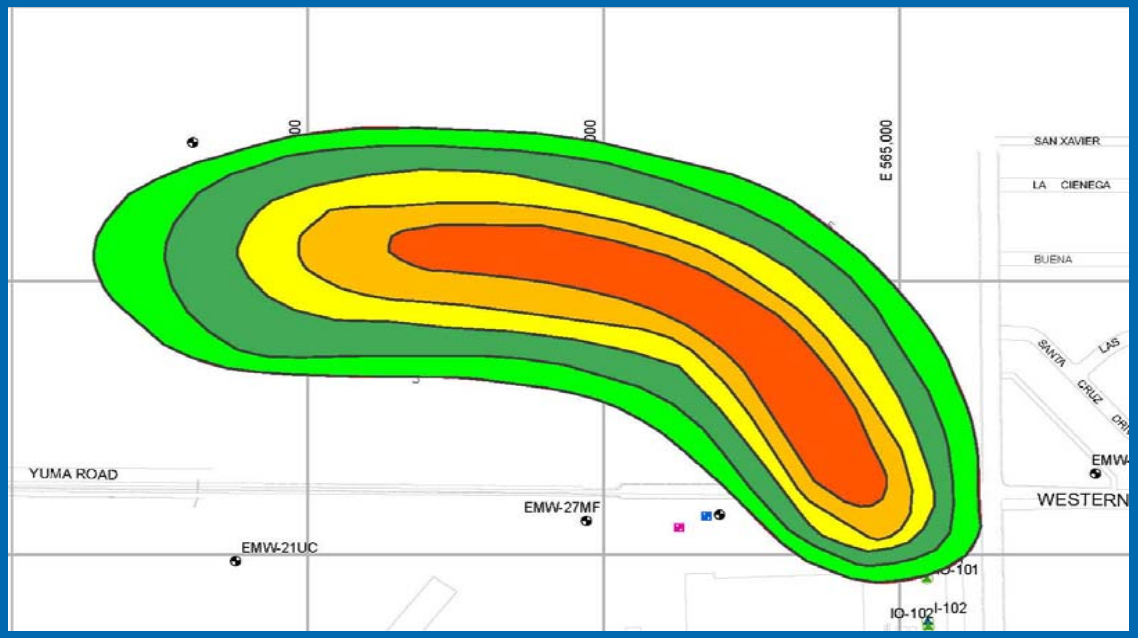
2008 TCE



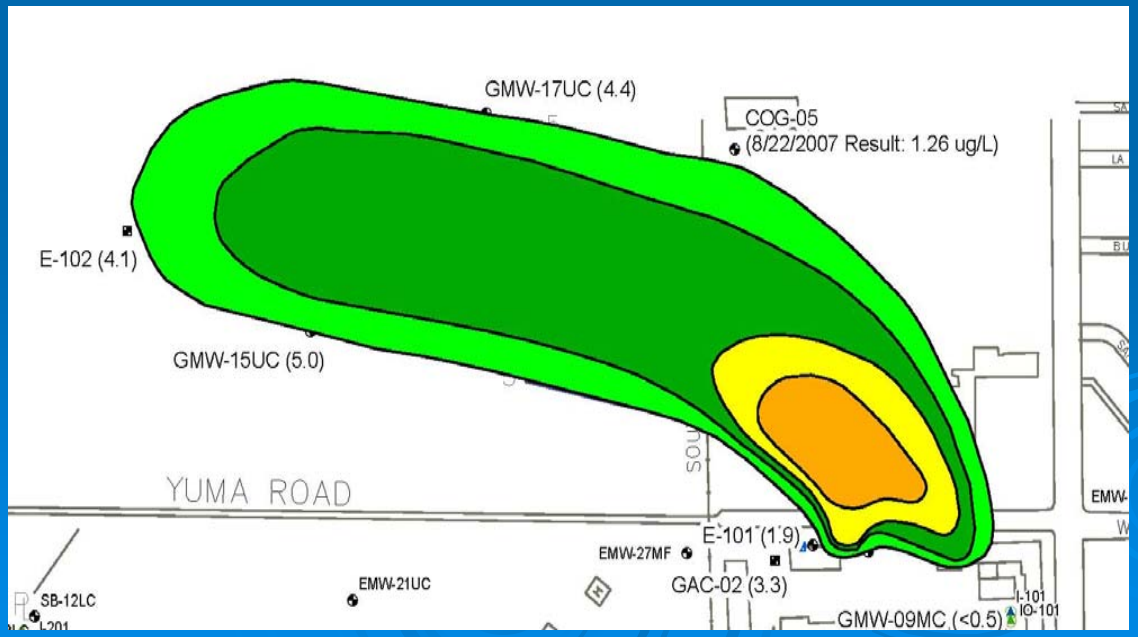
- 5ug/L
- 10ug/L
- 25ug/L
- 50ug/L
- 75ug/L
- 100ug/L

NORTHERN PLUME

1999 TCE



2008 TCE



- 5ug/L
- 10ug/L
- 25ug/L
- 50ug/L
- 75ug/L
- 100ug/L

TCE Concentrations

	Max TCE 1990	Max TCE 2008
Subunit A	2600 µg/L	150 µg/L
Southern Subunit C	150 µg/L	6.3 µg/L
Northern Subunit C	180 µg/L	57 µg/L

Upcoming Plans and Reports

- Installation of 3 additional North Plume monitoring wells
- Review Feasibility Study findings and conclusions with Agencies
- Finalize Vapor Intrusion Study Work Plan
- Submit GAC#4 Report on October 30, 2008

New Sampling Vehicle